REMARKS

Reconsideration of this application, in view of the foregoing amendment and the following remarks, is respectfully requested.

Claims 1-12 were originally presented for consideration in this application. Claims 13-20 were added by previous amendment. Accordingly, claims 1-20 are currently pending in this application.

This Supplemental Amendment is filed pursuant to a telephone interview with Examiner Angela DiTrani on March 23, 2010. The examiner's kind consideration and helpfulness in reaching agreement on how to express the patentable subject matter in the claims is greatly appreciated.

The following rejections and objections were set forth in the Office Action:

1. Claims 5 and 15 are objected to under 37 CFR §1.75(c) as being of improper dependent form.

2. Claims 1-5 and 7-20 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 4,716,965 (Bol) in view of International Publication No. WO 03/008756 (Bosma).

3. Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Bol in view of Bosma, and further in view of U.S. Patent No. 2,230,626 (Miller).

Regarding the objection to claim 5, please note that this claim has been amended above to make it clear that the expandable material extends from a retracted state to an expanded state "in reaction" to contact with the fluid as opposed to "as a reaction."

Regarding the objection to claim 15, please note that this claim has been amended above. Claim 15 now requires that the expanding step is performed "in reaction" to exposure of the expandable material to the fluid as opposed to "as a reaction" of the expandable material. Accordingly, withdrawal of the objections of dependent claims 5 and 15 is respectfully requested.

Regarding the obviousness rejections of claims 1 and 13 based on a proposed combination of the Bol reference with the Bosma reference, please note that Bol discloses a sheath of elastomeric foam capable of remaining resilient after compression. The sheath is attached to a casing and the casing is run into an uncemented wellbore. Cement slurry is forced into an annulus between the casing and the wellbore to cement the casing in place.

The cement slurry compresses the sheath as the slurry flows past the sheath while filling the annulus with cement. The cement may pull away from the casing, as the cement cures, leaving a micro-annulus between the casing and the cement. The resilient sheath expands to seal the micro-annulus to prevent fluid flow (gas and/or oil) longitudinally between the cement and the casing.

Expansion of the sheath into sealing contact with the cement does not require contact with a fluid. The sheath expansion occurs in response to a reduced compression force as the cement cures and pulls away from the casing.

Bosma discloses a wellbore with a vertical section that is cased and cemented, and an open hole horizontal section that is cased and divided into production intervals with multiple annular seal assemblies. The annular seal members are made of alternating portions of a material that swells upon contact with a hydrocarbon oil and a material that swells upon contact with water.

Bosma discloses that, in the event of water coning, a suitable patch is used to close off the appropriate interval. Should the material that swells upon contact with oil move to a retracted state due to discontinued contact with oil, the material that swells upon contact with water, expands to continue to provide isolation of the individual production intervals.

Bosma does not describe using the annular seal members in an area of the wellbore that is cemented. Instead, Bosma teaches using the annular seal members specifically where the wellbore is not cemented. There is absolutely no motivation whatsoever for a person skilled in the art to use the Bosma annular seal members in a method such as that recited in the Bol reference.

Furthermore, Bol teaches a seal material that will provide a seal in a gas and/or hydrocarbon oil wellbore. However, Bosma does not disclose a material that would provide a seal by swelling in reaction to contact with a gas. Therefore, substituting the Bosma material for the seal material of Bol would prevent the resulting combination from preventing gas flow longitudinally though the micro-annulus, an essential feature of the Bol disclosure. Absolutely no one of ordinary skill in the art would be motivated to combine the Bol and Bosma references to produce the invention of claims 1 and 13, because each reference teaches away from its combination with the other reference.

Thus, the rejections do not satisfy the requirements set forth in the seminal U.S. Supreme Court case of *Graham v. John Deere* for evaluating whether an invention would have been obvious to a person of ordinary skill in the art at the time the invention was made. These requirements include determining the level of skill of the person having ordinary skill in the art, the scope and content of the prior art, and the differences between the claimed invention and the prior art. Additional considerations may include factors such as failure of others to solve the relevant problem, long felt but unsatisfied need, skepticism of others, teaching away in the prior art, unexpected results, copying, the pace of innovation in the art, commercial success, industry accolades, etc.

In the *Graham v. John Deere* opinion, the Supreme Court also explicitly warned against "slipping into use of hindsight" in obviousness determinations. *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966). Additionally, in the more recent case of *KSR v. Teleflex*, the Supreme Court has reiterated that an invention's merit is not to be evaluated from a perspective of a person having the benefit of already knowing the solution conceived by the inventor, but rather as it would have been perceived by a

person having only ordinary skill in the pertinent art. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1742-43 (2007).

In the present case, the person having ordinary skill in the art would likely have a bachelor's degree in engineering or a related applied science field, and would likely have several years' experience in designing sealing systems for use in subterranean wells.

The scope and content of the prior art have been discussed above. Bol specifically teaches that a foam sheath can be used to seal off micro-annulus spaces between casing and cement to prevent gas and/or hydrocarbon oil flow when the cement hardens. Bol specifically does not require contact with a fluid to effect a seal with the cement. Bosma teaches that the expandable annular seal members require contact with either water or a hydrocarbon oil to effect a seal by expanding the members. Furthermore, Bosma teaches using the expanding members in a wellbore that is not cemented. No person skilled in the art having knowledge of the Bol and Bosma reference teachings would combine them to produce the invention of claims 1 and claim 13, since each reference teaches away from its combination with the other reference.

The Board of Patent Appeals and Interferences recently addressed this issue in *Ex Parte Whalen II* (Appeal 2007-4423, July 23, 2008) as follows:

> The U.S. Supreme Court recently held that rigid and mandatory application of the "teaching-suggestion-motivation," or TSM, test is incompatible with its precedents. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007). The Court did not, however, discard the TSM test completely; it noted that its precedents show that an invention "composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *Id.*
>
> The Court held that the TSM test must be applied flexibly, and take into account a number of factors "in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed." *Id.* at 1740-41. Despite this flexibility, however, the Court stated that "it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements in the way the claimed new invention does." *Id.* "To facilitate review, this analysis should be made explicit." *Id.*

> [W]hen the prior art teaches away from the claimed solution as presented here . . . obviousness cannot be proven merely by showing that a known composition could have been modified by routine experimentation or solely on the expectation of success; it must be shown that those of ordinary skill in the art would have had some apparent reason to modify the known composition in a way that would result in the claimed composition.

In the present case, the cited Bol and Bosma references each teach directly away from the claimed invention, as in the *Ex Parte Whalen II* case (in which the Board reversed an obviousness rejection). Accordingly, withdrawal of the rejections of independent claims 1 and 13, and their dependents, is respectfully requested.

In view of the foregoing amendment and remarks, all of the claims pending in this application are now seen to be in a condition for allowance. A Notice of Allowance of claims 1-20 is therefore earnestly solicited.

The applicant(s) hereby file this Statement of Substance of Interview Under 37 CFR §1.133 regarding the interview with the examiner held on March 23, 2010, as required by the Interview Summary dated March 26, 2010.

The substance of the interview was as follows:

1) A brief description of the nature of any exhibit shown or demonstration conducted.

None

2) An identification of the claims discussed.

Claims 1, 5, 8, 13, and 15

3) An identification of the specific prior art discussed.

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4) An identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the examiner.

Proposed amendments to dependent claims 5 and 15 were suggested to require "in response" instead of "as a response."

5) A brief identification of the general thrust of the principal arguments presented to the examiner.

There is a lack of motivation to combine the Bol and Bosma references in the rejections of claims 1 and 13.

6) A general indication of any other pertinent matters discussed.

The examiner indicated that the rejection of claim 8 would be withdrawn.

7) If appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

The examiner indicated that the objections to claims 5 and 15 would be overcome by the proposed amendments above.

The examiner indicated that the rejection of claim 8 would be withdrawn.

The examiner is hereby requested to telephone the undersigned agent of record at (214) 556-2332 if such would expedite the prosecution of the application.

Respectfully submitted,

SMITH IP SERVICES, P.C.

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I hereby certify that this correspondence is being filed in the U.S. Patent and Trademark Office electronically via EFS-Web, on March 29, 2010.

/Sally Ann Smith/

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